

Debris removed from K West Basin – equipment, sludge next

Fluor Hanford workers completed a campaign this month to remove small debris from the K West Basin – a concrete pool formerly used to store spent nuclear fuel – and are now turning their attention to removing several very large pieces of equipment left from the previous fuel-handling work. “Finishing this portion of the work represents a huge step forward in K Basins cleanout,” says Jim Mathews, K West Basin closure director, “because it allows us to effectively pump sludge from this basin. We have proven through our own experience and from lessons learned in the K East Basin that removing debris makes pumping sludge much more efficient.”

Approximately 14,000 cubic feet of debris was removed from the K West Basin during the last year. Most of this material was “small” debris: more than 7,000 canisters that once held spent nuclear fuel, canister lids, various lights and lamps, and long-handled pole tools used to reach through grating above the basin to handle fuel stored in the water. The debris was loaded into specially designed metal boxes and 55-gallon drums for disposal as waste.

“The debris in the K West Basin was different than that removed from the K East Basin,” says Rhonda Nissen, manager of the floor and pit sludge retrieval system that will soon operate to collect sludge in the basin. “For one thing, nearly all of the fuel canisters from both Basins – more than 7,000 cans – had to be retrieved from the K West Basin. The cans from the East Basin were brought into the West Basin when the spent fuel was processed. Also, the K West Basin contained all of the lids (two lids per can) because the canisters of fuel in the K East Basin fuel didn’t have lids. The lids had long, protruding ‘gas traps’ attached, so grappling with all these pieces was very tedious.”

The gas traps, approximately 3,000 of them, were particularly troublesome because each had to be cut in half to allow basin water to drain out. No “free liquid” can be packaged in the disposal boxes. Each gas trap had to be handled at least three times by basin operators: first, they cut the trap from the canister lid; then cut the trap in half; pressure washed it; and finally, removed

it from the basin to a waste box.

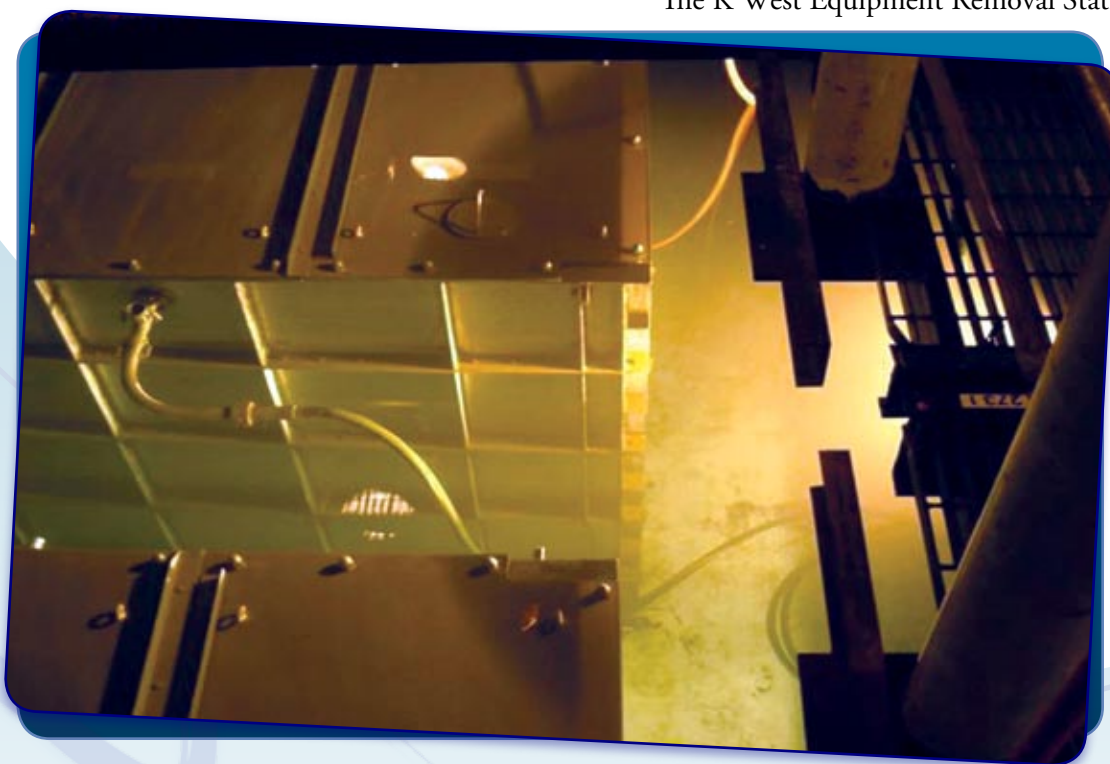
Nissen came to the K West Basin from the K East Basin, where, as debris-removal shift manager, she gained experience in removing over 100 tons of debris. Though much of the debris in the K East Basin was larger than that in the K West Basin, there wasn’t as much of it. K West work crews, she says, worked “diligently, patiently, and creatively to grasp nearly 20,000 individual pieces. They contributed good ideas to improve efficiency, and performed beautifully.”

Workers removing the debris wore two pairs of waterproof protective clothing, and used respirators, due to high levels of radioactivity in the basin. Electric hoists and underwater lights were necessary to guide the work. Some of the containers of waste have already been buried as low-level waste in Hanford’s Environmental Restoration Disposal Facility (ERDF). Those remaining will be transported and buried soon.

The next task in removing cumbersome materials from K West Basin will begin in the autumn, when workers start installing an Equipment Removal Station over the west portion of the basin. Nissen oversaw installation of a similar station in the K East Basin, and says it makes sense in terms of lessons learned. “Grappling with large equipment, rigging it and maneuvering it up and out of the water, while avoiding cuts to protective clothing, contamination spreads, and other undesirable incidents is extremely complicated. It can take a crew of up to 15 workers to handle a heavy, awkward, highly contaminated piece of equipment. We learned in the K East Basin that having a specially designed removal station is essential to doing it right.”

The K West Equipment Removal Station will be used

to remove many of the large parts of the Spent Nuclear Fuel Project’s Fuel Retrieval System (FRS). The FRS was installed in the late 1990s to facilitate washing, sorting, re-packaging, and loading out the 2,300 tons of spent fuel rods and pieces that were removed from the K West Basin during 2000-2004. FRS



Workers use special lighting to see containers in the murky water of the K West Basin.

Debris (Continued from page 2)

components planned for removal in the new Equipment Removal Station will include the FRS decapper, the empty fuel baskets queues, the secondary west process table, the south end of the primary process table, the stuck fuel station, as well as underwater portions of the manipulators. About 80 large fuel racks still left in the basin are also slated for removal.

The K West Basin Equipment Removal Station is expected to operate during autumn 2006. At nearly the same time, the KW Basin's sludge collection system will begin operating and will continue until approximately April 2007.

"Debris removal from the K West Basin is an important accomplishment in our overall plan to empty and remediate this basin," says Mathews. "It's a long road, but we are getting on with K Basins closure, people are working hard, and I'm proud and grateful for the dedication of our workers in finishing this task."

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Michele Gerber, Communications



Canisters removed from the K West Basin (above) are prepared for disposal. These waste packages, which contain canister lids removed from the K West Basin, are ready for disposal.